

**THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of	
Inventors: Charles R. Weirauch	: Confirmation No. 4096
	:
U.S. Patent Application No. 10/618,115	: Group Art Unit: 2627
	:
Filed: July 10, 2003	: Examiner: Tawfik A. Goma
For: OPTICAL STORAGE MEDIUM WITH OPTICALLY DETECTABLE MARKS	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attn: BOARD OF PATENT APPEALS AND INTERFERENCES

BRIEF ON APPEAL

This brief is in furtherance of the Notice of Appeal, filed in this case on September 5, 2007.

The fees required under § 1.17(f) have already been submitted with respect to the Appeal Brief filed February 26, 2007, however, any required petition for extension of time for filing this brief and additional fees therefore, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

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I. Real Party in Interest

The real party in interest is Hewlett-Packard Development Company, L.P., a Texas limited partnership.

II. Related Appeals and Interferences

There are no other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal.

III. Status of Claims

A. Total Number of Claims in Application

There is a total of 21 claims in the application, which are identified as claims 1-18 and 27-29.

B. Status of all the Claims

1. Claims cancelled: claims 19-26
2. Claims withdrawn from consideration but not cancelled:
3. Claims pending: claims 1-18 and 27-29.
4. Claims allowed:
5. Claims rejected: claims 1-18 and 27-29.

C. Claims on Appeal

Claims on appeal are claims 1-18 and 27-29.

IV. Status of Amendments

There are no outstanding un-entered amendments before the Examiner.

V. Summary of Claimed Subject Matter

The present invention relates generally to an optical storage medium comprising an optically detectable mark readable by a plurality of different optical systems and a method for determining the type of an optical storage medium by reading an optically detectable mark readable by a plurality of different optical systems.

Claim 1

In accordance with an apparatus embodiment, the present claimed subject matter of claim 1 comprises a disk-like body. (Specification at page 4, lines 3-12 and FIGs. 1A, 2A, and 2B) "[O]ptical storage medium 100 comprises a circular optical disc." Specification at page 4, line 5. "[O]ptical storage medium 100 comprises a disk-like body 205." (Specification at page 5, line 17)

The present claimed subject matter further comprises at least one optically detectable mark on the disk-like body, the at least one optically detectable mark being readable by a plurality of different optical systems configured for different types of optical storage media. (Specification at page 5, lines 15-25, page 6, lines 1-15, page 6, line 16 through page 8, line 3, and FIGs. 2A-2F) The optical storage medium comprises "at least one optically detectable mark 210 ('mark') that is readable by a wide range of optical systems configured for different types of optical storage media." (Specification at page 5, lines 17-19) "Marks that are appropriately sized and spaced may be detected even though the laser beam 145 of a given optical system cannot

focus properly on a data layer 130 of a particular optical storage medium 100." (Specification at page 5, lines 21-23) "One use for marks 210 is to indicate the type (e.g., CD, DVD, etc.) of optical storage medium 100. For example, the spacing 215 between marks 210, the size (e.g., width 220) of one or more marks 210, or a combination of the two may convey such information or other necessary information." (Specification at page 6, lines 10-13)

One or more advantages are achieved by the present invention as recited in the apparatus of independent claim 1 which provides: "An optical storage medium comprising a disk-like body and at least one optically detectable mark on the disk-like body, the at least one optically detectable mark being readable by a plurality of different optical systems configured for different types of optical storage media."

Claim 12

In accordance with a method embodiment, the present claimed subject matter of claim 12 comprises reading, from the optical storage medium using an optical system, at least one optically detectable mark that is readable by a plurality of different optical systems configured for different types of optical storage media. (Specification at page 10, lines 6-19, specifically lines 13-14, and FIG. 5) In an embodiment, the marks "are sized radially to allow for some degree of tolerance for the positional accuracy" of the optical system. (Specification at page 10, lines 11-12)

The present claimed subject matter further comprises interpreting the at least one optically detectable mark to identify the type of the optical storage medium.

(Specification at page 10, lines 6-19, specifically lines 14-19, and FIG. 5) "For example, optical system controller 420 may interpret the at least one mark 210 to determine the type of optical storage medium 100." (Specification at page 10, lines 17-19)

One or more advantages are achieved by the present invention as recited in the method of independent claim 12 which provides: "A method for determining the type of an optical storage medium, comprising: reading, from the optical storage medium using an optical system, at least one optically detectable mark that is readable by a plurality of different optical systems configured for different types of optical storage media; and interpreting the at least one optically detectable mark to identify the type of the optical storage medium."

Claim 27

In accordance with an apparatus embodiment, the present claimed subject matter of claim 27 comprises an optical system to read, from an optical storage medium, at least one optically detectable mark that is readable by a plurality of different optical systems configured for different types of optical storage media. (Specification at page 9, line 1 through page 10, line 5, specifically page 9, lines 1-18, and FIG. 4) "Optical device 400 may be any device capable of at least reading one or more types of optical storage media." (Specification at page 9, lines 2-3)

The present claimed subject matter further comprises logic configured to interpret the at least one optically detectable mark. (Specification at page 9, line 19

through page 10, line 5, and FIG. 4) "For example, optical system controller 420 may contain logic for recognizing the type of optical storage medium 100 or other useful information conveyed by marks 210." (Specification at page 9, lines 21-23)

One or more advantages are achieved by the present invention as recited in the apparatus of independent claim 27 which provides: "An optical device, comprising: an optical system to read, from an optical storage medium, at least one optically detectable mark that is readable by a plurality of different optical systems configured for different types of optical storage media; and logic configured to interpret the at least one optically detectable mark."

Claim 29

In accordance with an apparatus embodiment, the present claimed subject matter of claim 29 comprises means for reading, from an optical storage medium, at least one optically detectable mark that is readable by a plurality of different optical systems configured for different types of optical storage media. (Specification at page 9, line 1 through page 10, line 5, specifically page 9, lines 1-18, and FIG. 4, optical system 435, optical pickup unit 415, FIG. 5) "Optical device 400 may be any device capable of at least reading one or more types of optical storage media." (Specification at page 9, lines 2-3)

The present claimed subject matter further comprises means for interpreting the at least one optically detectable mark. (Specification at page 9, line 19 through page 10, line 5, and FIG. 4, optical system 435, optical system controller 420, FIG. 5) "For example, optical system controller 420 may contain logic for recognizing the type of

optical storage medium 100 or other useful information conveyed by marks 210."

(Specification at page 9, lines 21-23)

One or more advantages are achieved by the present invention as recited in the apparatus of independent claim 29 which provides: "An optical device, comprising: means for reading, from an optical storage medium, at least one optically detectable mark that is readable by a plurality of different optical systems configured for different types of optical storage media; and means for interpreting the at least one optically detectable mark."

VI. Grounds of Rejection to be Reviewed on Appeal

A. The issue is whether the Examiner was correct in rejecting claims 1-3, 5, 6, 9-18, and 27-29 under 35 U.S.C. 102(b) as being anticipated by Satoh et al. (U.S. Patent 5,119,363).

B. The issue is whether the Examiner was correct in rejecting claims 1, 2, and 4 under 35 U.S.C. 102(b) as being anticipated by Kobayashi (U.S. Patent 6,278,672).

C. The issue is whether the Examiner was correct in rejecting claims 1, 6, and 7 under 35 U.S.C. 102(b) as being anticipated by Hayashi (U.S. Patent 5,684,773).

D. The issue is whether the Examiner was correct in rejecting claim 8 under 35 U.S.C. 103(a) as being obvious over Hayashi in view of Yoon (U.S. Patent 6,772,429).

VII. Argument

A. Was the Examiner correct in rejecting claims 1-3, 5, 6, 9-18, and 27-29 under 35 U.S.C. 102(b) as being anticipated by Satoh?

The rejection of claim 1 under 35 U.S.C. 102(b) as being anticipated by Satoh is incorrect. A rejection based on 35 U.S.C. §102 requires every element of the claim to be included in the reference, either directly or inherently. Satoh fails to disclose all elements of claim 1 because Satoh fails to disclose at least an optically detectable mark "being readable by a plurality of different optical systems configured for different types of optical storage media." There are at least four reasons claim 1 is patentable over Satoh.

1. Satoh's index marks are read by a single optical system

The Patent and Trademark Office (PTO) asserted that Satoh discloses "the at least one optically detectable mark being readable by a plurality of different optical systems configured for different types of optical storage media (col. 5 lines 61-66 and col. 11 lines 3-16)." Final Official Action (FOA) mailed July 6, 2007 at paragraph bridging from page 2 over to page 3. Column 5, lines 61-66 of Satoh (emphasis added), reproduced herein for convenience and ease of reference, states:

Since the index mark 9 is formed by making the surface of the optical disk 1 coarse in the order of 1 micrometer in the same manner as the dimension of the guide tracks, the index mark 9 can be readily **detected** by an incoherent light source, such as a light-emitting diode, without using a laser light source.

The above portion of Satoh appears to describe the use of an incoherent light source for reading an index mark on the surface of an optical disk. There is no disclosure of a mark readable by a plurality of different optical systems.

Column 11, lines 3-16 of Satoh, reproduced herein for convenience and ease of reference, states:

In addition to, distinguishing between the sides of an optical disk, a similar index mark may be used to distinguish a disk from another. In other words, a plurality of kinds of disks may be distinguished from others by forming a specific index mark on disks of a given kind. Since the index mark can be used to ascertain the front or back side of a disk, and to ascertain the kind of a disk, there is an advantage that there is no need to scan a track carrying such information by means of a laser light beam. In the case that different intensity of reading laser beam and writing laser beam is required in accordance with the kind of the disk, suitable intensity of the laser light beam can be selected without energizing the laser.

The above portion of Satoh appears to describe the use of the previously-described incoherent light source, see column 5, lines 61-66 set forth above, to distinguish a disk from another. There is no disclosure of a mark readable by a plurality of different optical systems.

Further, the above portions of Satoh state that "the index mark 9 can be readily detected by an incoherent light source . . . without using a laser light source" and "there is an advantage that there is no need to scan a track carrying such information by means of a laser light beam." Thus, a different optical system is not used based on the disclosure of Satoh. As stated by Satoh, the "laser light beam can be selected without energizing the laser." Satoh fails to disclose an optically detectable mark

which is readable by a plurality of different optical systems. For at least this reason, reversal of the rejection is respectfully requested.

2. Satoh's index marks are not read by different optical systems

Second, Satoh fails to disclose that the index marks are read by different optical systems. Satoh appears to describe the use of an "index mark detector" to detect the index marks on the optical disk using, e.g., an incoherent light source, such as a light emitting diode. Satoh at column 5, lines 1-2. Satoh appears to describe with respect to the FIG. 10 embodiment that the index mark detector detects the index marks on the optical disk, while an optical head 28 reads and/or writes data from/to the optical disk at a particular sector. Nowhere does Satoh appear to disclose the optical head 28 as detecting or reading the index marks on the optical disk. Therefore, an optically detectable mark readable by a plurality of different optical systems is not disclosed by Satoh. For at least this reason, reversal of the rejection is respectfully requested.

3. Satoh's index marks are not readable

Third, Satoh fails to disclose at least one optically detectable mark being readable as claimed in the present claimed subject matter of claim 1. The optically detectable marks of the present claimed subject matter are readable so that the marks may be used in "communicating the type of an optical storage medium [and the] . . . marks may be used to convey other necessary information." Instant specification at page 3, lines 21-23. Nowhere does the PTO identify a disclosure of the marks of Satoh as being readable by a plurality of different optical systems configured for

different types of optical storage media as claimed in the present claimed subject matter. For at least this reason, reversal of the rejection is respectfully requested.

4. The claimed readable marks are not intended use

Fourth, the PTO asserted that "the optically detectable mark being optically readable by a plurality of different optical systems is not persuasive because a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art." FOA at page 7, first full paragraph 1. This is incorrect.

The claimed "mark being readable" is not intended use. The entirety of the claim language limits the claim to a particular structure, i.e., an optically detectable mark which is "**readable** by a plurality of different optical systems configured for different types of optical storage media." For example, the spacing of the marks, size of the marks (including width, radial length, or both), or a combination thereof may be specified to make the detectable marks readable by different optical systems which are configured for different types of optical storage media. Additionally, "the spacing 215 between marks 210 may be made sufficient for the marks 210 to be detectable by an optical system achieving a largest (worst-case) expected laser focus spot 160 with the corresponding amount of spot aberration." Instant specification at page 6, lines 19-22. Satoh fails to disclose the detectable marks as being readable by a plurality of different optical systems, as set forth above. Further, Satoh fails to disclose the detectable marks as being readable by a plurality of different optical systems

configured for different types of optical storage media, as set forth above. Thus, claim 1 sets forth claim language limiting the claim to a particular structure.

Based on at least the foregoing reasons, claim 1 is patentable over Satoh and the rejection should be reversed.

Claims 2-3, 5, 6, and 9-11 depend, either directly or indirectly, from claim 1, include further limitations, and are patentable over Satoh for at least the reason advanced above with respect to claim 1. The rejection of claims 2-3, 5, 6, and 9-11 should be reversed.

Claims 12, 27, and 29 are patentable over Satoh for at least reasons similar to those advanced above with respect to claim 1 and the rejection should be reversed.

Claims 13-18 and 28 depend, either directly or indirectly, from claims 12 and 27, respectively, include further limitations, and are patentable over Satoh for at least the reasons advanced above with respect to claims 12 and 27. The rejection of claims 13-18 and 28 should be reversed.

B. Was the Examiner correct in rejecting claims 1, 2, and 4 under 35 U.S.C. 102(b) as being anticipated by Kobayashi?

The rejection of claim 1 under 35 U.S.C. 102(b) as being anticipated by Kobayashi is incorrect. A rejection based on 35 U.S.C. §102 requires every element of the claim to be included in the reference, either directly or inherently. Kobayashi fails to disclose all elements of claim 1 as Kobayashi fails to disclose at least an optically detectable mark being readable by a plurality of different optical systems configured for different types of optical storage media.

The PTO asserted that Kobayashi discloses at least one optically detectable mark being readable by a plurality of different optical systems configured for different types of optical storage media at Fig. 6 and Fig. 4. This is incorrect because Kobayashi appears to attempt to measure the distance between detected layers of an optical disk without the use of an optically detectable mark which is readable by different optical systems as claimed in claim 1.

Kobayashi appears to determine the presence of data layers and not of marks readable by multiple optical systems. Kobayashi appears to use a focus error signal to determine an approximate vertical location of data layers, whereby the vertical locations determine the media type for which a given optical system is selected. Kobayashi fails to disclose an ability to read the optically detectable marks by different optical systems.

As stated above, Kobayashi appears to describe the detection of data layers without a disclosure of readability of the detected data layer by a plurality of different optical systems. Kobayashi describes selecting and using an appropriate optical

system for reading the detected data layers at column 3, lines 45-55 and column 5, lines 24-32. Because an appropriate optical system must be selected in order to read the detected data layers, Kobayashi fails to disclose a mark which is readable by a plurality of different optical systems. For at least this reason, reversal of the rejection is respectfully requested.

Further, the third reason advanced above with respect to Satoh, i.e., that the index marks are not readable, applies equally to Kobayashi. Kobayashi fails to disclose at least one optically detectable mark being readable as claimed in the present claimed subject matter of claim 1. The optically detectable marks of the present claimed subject matter are readable so that the marks may be used in "communicating the type of an optical storage medium [and the] . . . marks may be used to convey other necessary information." Instant specification at page 3, lines 21-23. Nowhere does the PTO identify a disclosure of the marks of Kobayashi as being readable by a plurality of different optical systems configured for different types of optical storage media as claimed in the present claimed subject matter. For at least this reason, reversal of the rejection is respectfully requested.

Based on at least the foregoing, claim 1 is patentable over Kobayashi and the rejection should be reversed.

Claims 2 and 4 depend, either directly or indirectly, from claim 1, include further limitations, and are patentable over Satoh for at least the reason advanced above with respect to claim 1. The rejection of claims 2 and 4 should be reversed.

C. Was the Examiner correct in rejecting claims 1, 7, and 8 under 35 U.S.C. 102(b) as being anticipated by Hayashi?

The rejection of claim 1 under 35 U.S.C. 102(b) as being anticipated by Hayashi is incorrect. A rejection based on 35 U.S.C. §102 requires every element of the claim to be included in the reference, either directly or inherently. Hayashi fails to disclose all elements of claim 1 because Hayashi fails to disclose at least an optically detectable mark being readable by a plurality of different optical systems configured for different types of optical storage media.

The PTO asserted that Hayashi discloses at least one optically detectable mark being readable by a plurality of different optical systems configured for different types of optical storage media at column 12, lines 34-46. Column 12, lines 34-46 of Hayashi, reproduced herein for convenience and ease of reference, states:

There is a method using information which is recorded at a lead-in area of the disc which is commonly assured in both of the CD and the DVD. The lead-in area is a recording area prepared in, for example, the innermost rim portion of the disc and exists at a position prior to a program area for recording main information. In the lead-in area, various signals indicative of the recording contents or outline of the program area, or the like are recorded. As one of the recording signals, there is a disc discrimination signal indicating that the disc belongs to the disc of which type (kind). That is, the disc discrimination signal indicates any one of the single layer DVD, dual layer DVD, DVD-R, and DVD-RAM.

The above portion of Hayashi appears to describe making use of Table of Contents information for CDs and Control Data Zone information for DVDs. Such information appears to be stored at the media's respective data density and is not readable by different optical systems for different types of optical storage media. For

example, a first optical system may attempt to read a particular type of lead-in area information and, in the event of failure of the attempt, a switch to a second optical system is performed to attempt to read the lead-in area information. If the second optical system attempt fails, the media is rejected as invalid. Thus, Hayashi fails to disclose a mark which is readable by different optical systems configured for different types of optical storage media as claimed in the present claimed subject matter. For at least this reason, reversal of the rejection is respectfully requested.

Further, the third reason advanced above with respect to Satoh, i.e., that the index marks are not readable, applies equally to Hayashi. Hayashi fails to disclose at least one optically detectable mark being readable as claimed in the present claimed subject matter of claim 1. The optically detectable marks of the present claimed subject matter are readable so that the marks may be used in "communicating the type of an optical storage medium [and the] . . . marks may be used to convey other necessary information." Instant specification at page 3, lines 21-23. Nowhere does the PTO identify a disclosure of the marks of Hayashi as being readable by a plurality of different optical systems configured for different types of optical storage media as claimed in the present claimed subject matter. For at least this reason, reversal of the rejection is respectfully requested.

Based on at least the foregoing, claim 1 is patentable over Hayashi and the rejection should be reversed.

Claims 6, 7 and 8 depend, either directly or indirectly, from claim 1, include further limitations, and are patentable over Hayashi for at least the reason advanced above with respect to claim 1. The rejection of claims 6, 7 and 8 should be reversed.

D. Was the Examiner correct in rejecting claim 8 under 35 U.S.C. 103(a) as being obvious in view of Hayashi in view of Yoon?

At least as described above with respect to claim 1 from which claim 8 depends, Hayashi fails to disclose all elements of claim 1 as Hayashi fails to disclose at least an optically detectable mark being readable by a plurality of different optical systems configured for different types of optical storage media. For at least this reason, reversal of the rejection is respectfully requested.

Further, the PTO asserts that a person of ordinary skill in the art at the time of Appellant's invention would have been motivated to combine Hayashi with Yoon "in order to provide a guard area for the disk." See Official Action at page 7, lines 1-3. Even assuming *arguendo* that Yoon and Hayashi were combined in the manner asserted by the PTO, the combination of references fails to disclose or suggest the present claimed subject matter of claim 8 because the "mark" of Yoon is not an optically detectable mark which is readable by a plurality of different optical systems as claimed in claim 1. The combination of Yoon with Hayashi appears to result in a disk having table of contents information per Hayashi and a lead-out area used as a guard per Yoon. For at least this reason, reversal of the rejection is respectfully requested.

Further still, the PTO has failed to articulate a reasonable rationale for moving the table of contents information of Hayashi from the beginning area, i.e., the lead-in area, of a disc to the end area, i.e., the lead-out area, of a disc. Because the CD and DVD disks of Hayashi are read from the beginning area to the end area, from the center or hub region of the disk toward the outer edge of the disk, it is not understood why a person of ordinary skill in the art would be motivated to place the table of

contents information at the end of the disk. For at least this additional reason, reversal of the rejection is respectfully requested.

Based on at least the foregoing, claim 8 is patentable over Hayashi in view of Yoon and the rejection should be reversed.

VIII. Conclusion

Each of the PTO's rejections has been traversed. Appellant respectfully submits that all claims on appeal are considered patentable over the applied art of record. Accordingly, reversal of the PTO's Final Rejection is believed appropriate and courteously solicited.

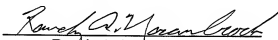
If for any reason this Appeal Brief is found to be incomplete, or if at any time it appears that a telephone conference with counsel would help advance prosecution, please telephone the undersigned, Appellant's attorney of record.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 08-2025 and please credit any excess fees to such deposit account.

Reversal of the rejection is in order.

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IX. Claims Appendix

1. An optical storage medium, comprising:

a disk-like body; and

at least one optically detectable mark on the disk-like body, the at least one optically detectable mark being readable by a plurality of different optical systems configured for different types of optical storage media.

2. The optical storage medium of claim 1, wherein the at least one optically detectable mark is located on a buried layer of the optical storage medium.

3. The optical storage medium of claim 2, wherein the buried layer is a non-data layer of the optical storage medium.

4. The optical storage medium of claim 2, wherein the buried layer is a data layer of the optical storage medium.

5. The optical storage medium of claim 1, wherein the at least one optically detectable mark is located on a surface of the optical storage medium.

6. The optical storage medium of claim 1, wherein the at least one optically detectable mark is located within a non-user-data area of the optical storage medium.

7. The optical storage medium of claim 6, wherein the non-user-data area comprises a lead-in area of the optical storage medium.

8. The optical storage medium of claim 6, wherein the non-user-data area comprises a lead-out area of the optical storage medium.

9. The optical storage medium of claim 1, wherein the at least one optically detectable mark is uniform in width along an axis coinciding with a radius of the optical storage medium.

10. The optical storage medium of claim 1, wherein the at least one optically detectable mark is shaped approximately like a sector of an annulus.

11. The optical storage medium of claim 1, wherein the at least one optically detectable mark is trapezoidal in shape.

12. A method for determining the type of an optical storage medium, comprising:

reading, from the optical storage medium using an optical system, at least one optically detectable mark that is readable by a plurality of different optical systems configured for different types of optical storage media; and

interpreting the at least one optically detectable mark to identify the type of the optical storage medium.

13. The method of claim 12, wherein the optical storage medium comprises a circular disc and the at least one optically detectable mark comprises a band of optically detectable marks disposed around a circle concentric with the circumference of the optical storage medium.

14. The method of claim 13, wherein the optically detectable marks comprising the band are uniformly spaced.

15. The method of claim 13, wherein the optically detectable marks comprising the band are spaced sufficiently far apart to be detectable by an optical system achieving a predetermined largest expected focus spot.

16. The method of claim 13, wherein interpreting the at least one optically detectable mark to identify the type of the optical storage medium comprises measuring the spacing of the optically detectable marks comprising the band.

17. The method of claim 12, wherein interpreting the at least one optically detectable mark to identify the type of the optical storage medium comprises measuring at least one dimension of the at least one optically detectable mark.

18. The method of claim 12, wherein the type comprises at least one of CD, DVD, Blu-ray, and AOD.

27. An optical device, comprising: an optical system to read, from an optical storage medium, at least one optically detectable mark that is readable by a plurality of different optical systems configured for different types of optical storage media; and logic configured to interpret the at least one optically detectable mark.

28. The optical device of claim 27, wherein the optical device comprises at least one of a DVD device, a CD device, a Blu-ray device, an AOD device, and a computer optical drive.

29. An optical device, comprising: means for reading, from an optical storage medium, at least one optically detectable mark that is readable by a plurality of different optical systems configured for different types of optical storage media; and means for interpreting the at least one optically detectable mark.

X. Evidence Appendix

None.

XI. Related Proceedings Appendix

None.